Responses to the City of Fargo

Comments on the Draft Report Red River Valley Water Supply Project Needs and Options

CITY OF Fargo

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September 29 2005

Mr. Dennis Breitzman
Bureau of Reclamation
304 East Broadway Avenue
Bismarck, ND 58501

Re: Draft Needs and Options Report Comments
Red River Valley Water Supply (RRVWS) Project

Dear Mr. Breitzman:

The City of Fargo is relying on the RRVWS Project as a means for securing an adequate and reliable future water supply, which is a very high priority for the City of Fargo in order to sustain tne progressive growth of our community. The City of Fargo has reviewed the Draft Needs and Options Report (Report) and supporting documentation per the request by the Bureau of Reclamation (Reclamation). Enclosed with this letter is an Appendix of our detailed comments prepared with the support of technical and legal consultants. Please let me stress the following highlights from our comments:

Comment 1

Alternatives: The City of Fargo feels that the alternative comparison and cost estimates provided in the Report appear to be adequate for the purpose of comparing the alternatives and selecting a preferred alternative. Based on information presented in the Report, it is clear that the Garrison Diversion Unit (GDU) Import to the Sheyenne River is the preferred alternative due to the relative costs, reliability, and technical feasibility when compared to other alternatives. The City of Fargo is interested in better understanding the operational assumptions of this alternative and refining the cost estimate as the RRVWS Project moves forward with the Environmental Impact Statement (EIS) and ultimately into design and construction.

Comment 2

Hydrology: The City of Fargo is pleased with the hydrology modeling effort completed by Reclamation. Moving forward, additional hydrology modeling should be considered to address maintaining the Thompson-Acker Plan allocations and a refinement of triggers that would cause systems to request releases from Lake Ashtabula. Subsequent hydrology modeling efforts should also consider the minimum stream flow recommendations by the North Dakota Game and Fish Department to meet aquatic environment needs.

Comment 3

Groundwater: The availability of groundwater resources in eastern North Dakota is limited with respect to the ability to provide large volumes of high quality water to meet the demands of larger communities, such as Fargo. Until more detailed feasibility analysis is conducted and water law authorizes Aquifer Storage and Recovery (ASR), the City of Fargo strongly opposes the consideration of alternatives including ASR as a feature. Although more plentiful groundwater resources are available in Minnesota, the City of Fargo maintains its concerns with respect to the conditions and triggers authorizing the delivery of groundwater from Minnesota to North Dakota, which arguably could prevent the ability for Minnesota groundwater sources to adequately meet the water needs of RRVWS Project stakeholders.

Fargo-Moorhead All-America City 2000

Responses to the City of Fargo

Response to Comment 1

Cost estimates were developed in the Needs and Options Report to compare options, but these were not refined to a feasibility level in the final report. Such estimates will be developed during final engineering after selection of a preferred alternative.

Key hydrology and operational assumptions used in modeling appear in the Final Needs and Options Report, section 3.5.3 of chapter three, section B.3.3 of the Appendix B, and Attachment B.3 of Appendix B. Hydrology assumptions that pertain to the development of flow data used in modeling are in "Historic and Naturalized Monthly Streamflow for Selected Sites in the Red River of the North basin in North Dakota, Minnesota, and South Dakota, 1931-2001," U.S. Geological Survey Scientific Investigations Report, 2005-5092."

Response to Comment 2

The Thompson-Acker water allocation was "turned off" in hydrologic modeling in the Final Needs and Options Report to maximize effective use of Lake Ashtabula storage. This decision was discussed with the Corps of Engineers, St. Paul District, State Water Commission, and Garrison Diversion Conservancy District. Reclamation may consider this comment further prior in preparing the FEIS.

Reclamation conducted an instream flow assessment for the Sheyenne and Red Rivers as part of the needs assessment studies. Additional analysis was completed based on the minimum instream flow recommendations from the North Dakota Game and Fish Department. This analysis is described in the Final Needs and Options Report in chapter four, pages 4-41 through 4-43 and Appendix C, Attachment 10. However, neither the community-based flow regime developed by Reclamation nor the flow regime recommended by the North Dakota Game and Fish Department were included in any of the options. Both would require expensive infrastructure to implement, and do not appear to be viable, because a project sponsor willing to cost-share the expense has not been identified.

Response to Comment 3

Additional descriptions of the technical and legal concerns with aquifer storage and recovery (ASR) are in chapter 3, pages 3-29 through 3-40 of the Final Needs and Options Report. ASR features proposed in the Draft Needs and Options Report were not modified for the final report. Reclamation has added language to the report providing more information about ASR and possible limitations to the technology.

Discussion of the legal obstacles of using Minnesota water sources is outside the scope of the Needs and Options Report. Nearly all of the water sources considered in this report have legal obstacles associated with their use. This is not an issue unique to Minnesota water sources. Chapter five of the DEIS identifies laws, regulations, and executive orders that have been considered as part of Project development.

Legal Issues: The City of Fargo believes that there are many areas of the water law in North Dakota and Minnesota that require interpretation and clarification prior to the implementation of the alternatives presented in the Report. It is anticipated that the identified legal issues could be addressed during the finalization of the EIS or during subsequent phases of implementation.

Comment 4

Water Quality: The draft Report appears to inadequately address the water quality needs of the Red River Valley with respect to proposed and potential future drinking water regulations. The final Report should address this issue. It is also recommended that concerns related to wastewater discharges and water quality during low flow conditions be addressed, which may be more appropriately incorporated into the final EIS.

Comment 5

Water Conservation: The City of Fargo is pleased that Reclamation has considered the perspective of the stakeholders and incorporated the respective suggestions into the Final Water Conservation Potential Assessment. While the revised water conservation values appear to be achievable, it is noted that water systems will need to allocate substantial resources to accomplish the identified water savings objectives.

The successful implementation of the RRVWS Project is extremely important to the City of Fargo; therefore, Reclamation's continued commitment to the completion timeline of the study documents is critical. The City of Fargo appreciates the continued opportunity to review documentation prepared for the RRVWS Project. Please contact me at (701) 241-1310 or Fargo City Administrator Pat Zavoral at (701) 241-1553 with any questions.

Sincerely,

Bruce W. Furness
Mayor

BWF:sf
Enclosures
cc: City Administrator Pat Zavoral
City Engineer Mark Bittner
Enterprise Director Bruce Grubb
John Dingess, Special Legal Counsel
Steve Burian, AE2S
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Responses to the City of Fargo

Response to Comment 4

Reclamation expanded the discussion of water quality needs in the Final Needs and Options Report in chapter two, pages 2-74 through 2-83. Reclamation addressed wastewater treatment plant impact on water quality in chapter two, page 2-84. Additional water quality analyses to address the impacts on wastewater treatment plant releases on surface water quality in the Sheyenne and Red Rivers and on water treatment processes will be included in the FEIS.

Response to Comment 5

We look forward to your continued participation on the Cooperating Agency Team.

Comment 6

The following comments were developed by the City of Fargo pursuant to a review of the Draft Needs and Options Report (Report) prepared by the Bureau of Reclamation (Reclamation). The City desires that these comments be addressed in the final Needs and Options Report, the final Environmental Impact Statement (EIS), or as the preferred alternative moves into design and construction.

Considered RRVWS Project Alternatives

The City of Fargo generally concurs that the alternatives developed by Reclamation provide a comprehensive number of possible features and alternatives for consideration to meet the future water needs of the Red River Valley. Furthermore, Fargo recognizes that, although many of the cost estimates remain at an appraisal level, the cost estimates provide an adequate means for alternative comparison. In order to pursue federal appropriations, however, it is suggested that the cost estimates be refined to reflect feasibility level estimates upon the selection of the preferred alternative. It is anticipated that this effort could be completed during the finalization of the EIS.

Comment 7

The evaluation process of the alternatives by the City of Fargo was greatly enhanced due to the level of participation in the RRVWS Project effort by City of Fargo representatives. Unfortunately, it is apparent that other stakeholders, some of which have identified water shortages, have not participated in various meetings devoted to disseminating key information regarding the assumptions and critical issues that define the benefits and shortcomings of the various alternatives. The City of Fargo recommends that Reclamation provide supporting documentation that summarizes the operational assumptions for each of the considered alternatives. It is also recommended that an objective list of non-economic advantages and disadvantages be developed for each of the alternatives. For instance, the ability or inability for an alternative to meet projected demands should be explicitly stated.

Comment 8

Meridian Environmental Technology has noted that droughts are a recurring phenomenon in the Red River Valley. The potential for drought is justification for water providers to maintain water supplies from as many basins as possible, as water may be available in one basin but not available in another at a particular time. Certainly, the potential exists for multi-basin droughts; however, water suppliers with diverse systems that receive supplies from multiple basins will be on the best foundation to operate during times of drought. As an example, it should be acknowledged that the use of the Missouri River provides dual source benefits to Red River Valley stakeholders.

Comment 9

Furthermore, objective benefits of utilizing Lake Ashtabula as a regulating reservoir under the GDU Import to the Sheyenne River should be noted to include:

- The ability to meet demands during emergency repairs and routine maintenance activities on water supply, treatment, and transmission system infrastructure is improved via the presence of relatively large storage volume capacity;
- The ability to meet peak day demand capacity without the need to substantially increase the diameter of pipeline and diversion infrastructure;

Responses to the City of Fargo

Response to Comment 6

We agree that the cost estimates are adequate to compare alternatives, but are not suitable for requesting authorization or construction fund appropriations from Congress. Feasibility-level estimates will be developed during final engineering of the preferred alternative after it is selected.

Response to Comment 7

Key hydrology and operational assumptions used in modeling appear in the Final Needs and Options Report, section 3.5.3 of chapter three, section B.3.3 of the Appendix B, and Attachment B.3 of Appendix B. Hydrology assumptions pertaining to development of flow data used in modeling are in "Historic and Naturalized Monthly Streamflow for Selected Sites in the Red River of the North basin in North Dakota, Minnesota, and South Dakota, 1931-2001," U.S. Geological Survey Scientific Investigations Report, 2005-5092."

The beneficial and adverse effects of each of the alternatives are disclosed in the DEIS. All of the options in the Draft Needs and Options Report meet the projected water demands. Only the No Action Alternative in the DEIS fails to meet the purpose and need of the proposed Project. The adverse and beneficial effects of all of the alternatives are disclosed in chapter four of the DEIS.

Response to Comment 8

Table 2, page 29 in Meridian Environmental Technology's report, "Drought Frequency Investigations of the Red River of the North Basin," shows that the drought between 1929 – 1942 was statewide, as were the droughts of 1952 – 1962, and 1988. During those statewide droughts, water supplies in both the Missouri River Basin and the Red River Basin were adversely affected.

Response to Comment 9

Lake Ashtabula would be used as a regulating reservoir to meet MR&I demands for all options except for the GDU Water Supply Replacement Pipeline Alternative. However, the regulating capability of the lake is a significant advantage in the GDU Import to Sheyenne River and Missouri Import to Red River Valley Alternatives. The beneficial and adverse effects of each of the alternatives are disclosed in the DEIS. The threshold of "acceptable risk" is not defined in the DEIS, but the risks of biota transfer are quantified.

- The ability to operate over extended periods of time at consistent production rates, which alleviates the need for peak day biota water treatment and pumping capacity; and
- The ability to provide recreational and aquatic enhancements.

It is anticipated that disadvantages associated with the GDU Import to the Sheyenne River alternative would also be identified, such as general opposition to the inter-basin transfer of water, potential downstream impacts on the Missouri River, and biota transfer concerns. Although these issues should be identified, it should be noted that:

- The inter-basin transfer of water is a present strategy for meeting water needs in other regions;
- The amount of water transferred to the Red River Valley is relatively insignificant when compared to the amount of water available in the Missouri River Basin and when compared to imports into the Missouri River Basin from the Colorado River and Arkansas River Basins; and
- It is possible to achieve an acceptable risk of biota transfer through controlled and contained conveyance measures.

Comment 10

Concerns regarding the use of groundwater sources under various alternatives remain to be addressed. For instance, the triggers authorizing utilization of aquifers in Minnesota as supplemental water supplies under the Red River Basin Alternative need to be clearly defined. In addition, documentation has indicated that the aquifers in Minnesota may only be available to supplement certain types of water needs per prescribed priorities of use, which could potentially exclude industrial demands. If so, the Red River Basin Alternative would fail to meet the industrial component of identified water needs and fundamental objective of the RRVWS Project.

Certainly, there are other objective advantages and disadvantages that could be listed and discussed under the various alternatives. If it is Reclamation's intent to provide such information in the EIS, the City of Fargo would agree with excluding this information from the Report.

Hydrology Modeling

Comment 11

As noted under the previous discussion, a series of hydrology modeling assumptions was developed in order to establish an operational strategy for the alternatives to meet peak annual, peak month, and peak day demands. Although a summary of operational assumptions for the features is provided in the Report, there are operational assumptions regarding feasibility that were not readily identified in the report, such as the amount and duration of discharge capacity planned from Lake Ashtabula during peak demands. A summary of this information would greatly assist in understanding, evaluating, and comparing the alternatives with respect to technical concerns such as but not limited to the following:

- The potential for a more severe drought event than the baseline 1930s drought to occur;
- Triggers authorizing the operation of features designated for use during a period of drought or water supply shortage;

Responses to the City of Fargo

Response to Comment 10

Hydrology modeling of the Red River Basin Alternative took into account that Minnesota water sources would only be used during drought by withdrawing from North Dakota water sources before turning to Minnesota groundwater (see DEIS Appendix B.1, page B.1-8). Industrial demands are met by all of the options, including the Red River Basin Alternative.

Response to Comment 11

Wastewater and water quality concerns are addressed in the Final Needs and Options Report, chapter two, pages 2-74 through 2-83 and will be further analyzed in the EIS. The report did not address a drought more severe than a 1930s type event, but a frequency analysis of the 1930s hydrologic drought will be conducted in the FEIS. If such an event should occur, drought contingency measures could be implemented by the MR&I water systems. Grand Forks peak day historic data are explained on pages 2-19 through 2-23. River travel time and intake submergence were not addressed in the Final Needs and Options Report, but some additional hydrology modeling sensitivity analysis will be conducted in the FEIS to address some of these concerns.

- The potential limitations of Grand Forks historical data as the baseline water demand curve;
- Hydraulic travel time and associated transportation losses;
- Intake screen submergence;
- Water quality; and
- Wastewater discharge impacts.

Comment 12

The City of Fargo questions the assumption of eliminating the water appropriations from Lake Ashtabula established by the Thompson-Acker Plan from the hydrology model under the RRVWS Project alternatives. Systems reserved stored water capacity in Lake Ashtabula via sharing in the costs of the construction of Bald Hill Dam, and water permits were granted accordingly. The City of Fargo respectfully requests that the Thompson-Acker appropriations remain effective in the hydrology modeling efforts. The impacts of this request, if any, could likely be addressed during the finalization of the EIS.

Comment 13

During the discussion of climate, the draft Report states that the Red River Valley has experienced above normal precipitation over that last decade. Hydrology modeling results also have indicated that shortages would be experienced under current demands and drought conditions similar to the 1930s. If normal precipitation patterns return, the need for additional water resources becomes a chronic situation. If it is possible to do so, it would be interesting to identify a threshold level of precipitation or extent of drought that constitutes a water supply shortage under present and future demand scenarios. This information, which could be provided during the completion of the EIS, would assist in assessing the risk and impact of marginal drought events with more frequent occurrence intervals.

Comment 14

The assumption that the Red River supply should be exhausted (assumed to constitute complete depletion) by water users in the Fargo-Moorhead Metropolitan area prior to utilization of the Sheyenne River (Lake Ashtabula) should be revisited. It is anticipated that ensuing water quality degradation and associated treatment costs under extremely low flows would likely prompt water users to consider secondary water supplies in a more proactive manner. The practicality of this assumption is also questioned, because it provides little margin for error in making water supply utilization decisions. Again, the impacts of this request, if any, could likely be addressed during the finalization of the EIS.

Comment 15

Other issues include the use of relatively large storage facilities to meet local peak day demands under the North Dakota In-Basin, Red River Basin, Lake of the Woods, and Missouri River to Red River Valley Import Alternatives. The use of relatively large storage facilities as features to meet local peak day demands contains a host of operational limitations and considerations that need to be addressed from a technical feasibility perspective. A technical "white paper" detailing the operational strategy for the storage facilities would assist in evaluating the feasibility of utilizing relatively large storage facilities to meet peak day demands, unless these facilities are no longer considered under the preferred alternative.

Comment 16

Aquifer Storage and Recovery (ASR) is also identified as a potential strategy for meeting peak day demands. On page 3-32, the draft Report lists a quantified amount of surplus surface water that would potentially be available over a 10-year 1930s drought period, presumably for the

Responses to the City of Fargo

Response to Comment 12

Thompson-Acker water allocation was "turned off" in hydrologic modeling in the Final Needs and Options Report to maximize effective use of Lake Ashtabula storage. This decision was made in consultation with the Corps of Engineers, St. Paul District; State Water Commission; and Garrison Diversion Conservancy District. Reclamation may consider this comment further in preparing the FEIS.

Response to Comment 13

The naturalized flow database developed by U.S. Geological Survey and used by StateMod in surface water quantity modeling covered a 71 year period of record. This period of record includes years of "normal" precipitation as well as years of above and below normal precipitation. A sensitivity analysis was conducted for drought contingency using the two water demand scenarios (see Final Needs and Options Report, chapter four and Appendix C, Attachment 9). A sensitivity analysis including population, drought measures, water conservation and water demands will be conducted in the FEIS.

Response to Comment 14

Reclamation expanded the discussion of water quality needs in the Final Needs and Options Report in chapter two, pages 2-74 through 2-83. Reclamation addressed wastewater treatment plant impact on water quality in chapter two, page 2-84. Additional water quality analyses to address the impacts on wastewater treatment plant releases on surface water quality in the Sheyenne and Red Rivers and on water treatment processes will be included in the FEIS.

All of the options were designed with an understanding of the difficulties associated with water source operational decisions. The in-basin options addressed this with the flexibility of having multiple water sources available to most MR&I systems. Missouri River transfer conveyance features were designed to accommodate peak day water demands.

Response to Comment 15

No operational "white paper" on large storage facilities was developed to address these storage concerns. Costs for large storage facilities have been estimated to account for special design considerations associated with potential operational challenges.

Response to Comment 16

Reclamation took into account anticipated water treatment plant capacity and timing of excess flows to calculate the amount of surplus water available for ASR recharge. Even if the system were not operated as efficiently as described, sufficient water supply would be available by removing existing demands on these aquifers. Additional description of the technical and legal aspects of ASR are in the Final Needs and Options Report, chapter three, pages 3-29 through 3-40.

purpose of ASR in the West Fargo North Aquifer. A subsequent statement suggests that the aquifer would need to be recharged prior to a drought in order to have no net change in aquifer storage. The discussion suggests two distinctively different situations. For instance, it should be noted that although surplus surface water flows could be present during a drought, the duration over which the surplus flows occur coupled with the limited amount of excess treatment capacity available to treat the water for the purpose of ASR could be limiting factors. Therefore, the volume of water that could actually be captured, treated, and injected into an aquifer over a 10-year period of a 1930s drought may not adequately recharge the aquifer to the extent of realizing no net change in storage. However, if the aquifer is to be recharged prior to a drought during normal conditions and corresponding water demands, the concept is likely feasible, pending the appeasement of other technical issues. This paragraph should be qualified or revised to reflect water capture efficiency limitations and conclude that it would likely be most appropriate to recharge an aquifer prior to and/or after a drought.

Section 3.2.1 presents a groundwater overview of the Red River Valley. Within that section on page 3-8, the West Fargo South Aquifer is discussed. Therein it is stated that an ASR program might be implemented in this aquifer and that water could be withdrawn in relatively the same amounts as it is added to the aquifer. In March 2005, the City of Fargo received communications from the State Engineer concerning this aquifer, which communications stated that pumping by the community of West Fargo will have no measurable impacts upon the nearby Sheyenne River. The net result of the State Engineer's comments and the conclusions of Reclamation is that the West Fargo South Aquifer has no connection to the Sheyenne River. This is a point that should be highlighted in the Report.

Comment 17

Finally, the draft Report mentions the potential for construction of a low head dam on the Red River upstream from Fargo, presumably in the Wahpeton area to enhance the recharge of the Wahpeton Buried Valley Aquifer. The construction or operation of any such feature must be undertaken such that no injury occurs to downstream water rights; otherwise, such impacts should be addressed in the EIS.

Groundwater

Comment 18

In the introductory remarks to Section 3.3 of the Report, it is stated that systems that rely on groundwater will not have adequate future supplies and that attempting to make up that shortfall through the use of junior water permits or surface diversions will not likely produce a reliable future water source. The City of Fargo endorses these remarks and believes they are some of the most important statements of the Report. The City of Fargo would also point out that in other areas of the western United States that have suffered water supply problems frequently, small or relatively newly developed water providers will often seek aid and assistance during times of trouble from the older and larger water suppliers. That is to say, junior appropriators often approach a senior appropriator seeking the resources of the larger neighbor in an effort to resolve their water supply predicaments. While certainly principles of comity urge that some attempt to assist are made on an emergency basis, the City of Fargo believes the Report should note that if efforts are not made forthwith to provide areas that rely on groundwater for water supply with additions to their system, then the time will soon come when entities such as Fargo

Responses to the City of Fargo

Response to Comment 17

In the Final Needs and Options Report it is recognized on page 3-38 that "the value of a low-head dam to the Wahpeton Buried Valley Aquifer is nearly impossible to quantify without knowing the full extent of contact between the Red River and surrounding permeable formations." This low-head dam was not included in the DEIS and is not a Project feature.

Response to Comment 18

Comment noted; however, the key to the analysis of the groundwater systems was the adequacy of their existing permit meeting future demands. Reclamation did not assess whether an increase in permitted withdrawals would be granted by the North Dakota State Water Commission for individual community and rural water systems.

or Grand Forks will not be able to be in a position to assist neighboring suppliers who are unable to meet their demands.

Legal Issues

Comment 19

Throughout the draft Report, Reclamation bases many of its statements and assumptions upon its understanding of the status of certain aspects of North Dakota Water Law. The City of Fargo believes that there are many areas of North Dakota Water Law that are relatively vague and should be specifically clarified prior to the commencement of any of the proposed projects set forth in the Report. The City of Fargo believes that it is highly likely that should any project be selected, such project will require the borrowing of money through the issuance of bonds. The necessary review of the status of North Dakota water law by bond counsel will likely generate similar questions. It is anticipated that an effort to address legal issues either presented below or identified by other entities will be conducted during the finalization of the EIS.

The City of Fargo is troubled by the lack of legal precedent concerning transit loss and stream carriage. North Dakota Century Code §61-01-05 provides that a water rights owner may "reclaim" water from a water course into which it has introduced water upstream. However, that statute contains the troubling phrase, "subject to existing rights," which could be interpreted to state that other water rights on the stream may have the legal authority to interfere with using the stream for carriage purposes. The City of Fargo believes that this issue should be clarified. The City of Fargo further believes that a statement or opinion by the State Engineer's Office will not be sufficient to clarify the question. The City of Fargo believes that such an opinion could be reversed at any time by a successor to the State Engineer and that in order to provide binding legal precedent, clarification of this section should be in the form of a declaratory judgment decree.

Additionally troubling is the following phrase in North Dakota Century Code §61-01-05 concerning stream losses: "due allowance for losses being made, as determined by the state engineer." Previously Fargo representatives met with state engineer staff concerning transportation losses, if any, on the Sheyenne River. Fargo representatives were told that stream loss figures were not available because they were difficult to produce given that the Sheyenne River apparently has sections where it gains flows and other sections where flows are lost. Obviously, an accurate understanding of the situation is needed prior to the use of streams in general, and the Sheyenne River, in particular for water transportation.

The City of Fargo also believes that the matter of releases of stored waters from receiving reservoirs is not well described by North Dakota Water Law. In particular, Lake Ashtabula is suggested as a receiving reservoir for one of the options, a transbasin diversion to the Sheyenne River from the Missouri River. Fargo understands that there is a dispute between the State Engineer's Office and the Army Corps of Engineers concerning who maintains "the keys to the outlet works," i.e., who has authority to require releases of water from this facility. Certainly, it can not be left to argument between administrative agencies as to the procedure for the release of stored water.

Responses to the City of Fargo

Response to Comment 19

Additional descriptions of the technical and legal concerns with ASR are in chapter three, pages 3-29 through 3-40 of the Final Needs and Options Report. Discussion of the legal obstacles of using Minnesota water sources is outside the scope of the Needs and Options Report, but an overview of riparian water law is in on pages 3-3 through 3-4. Nearly all of the water sources considered in this report have legal obstacles associated with their use. Chapter five of the DEIS identifies laws, regulations, and executive orders that have been considered as part of Project development.

Another area where clarification of North Dakota Water Law is needed is the operation of individual water permits. For example, the City of Fargo holds permits on both the Red River and the Sheyenne River. Some have suggested that Fargo may be bound to exhaust its more senior permit before it can begin to take water under its junior permit. Others suggest that it is appropriate for the owners of permits to determine which might best serve their needs and obtain supplies from any permit that may be in priority at the time.

Another example of need for clarification concerns a suggestion in the draft Report that the State Engineer might reserve certain ground waters for future development related to the project pursuant to North Dakota Century Code §61-04-31. Research by the City of Fargo has revealed that this section of the North Dakota statutes has rarely, if ever, been implemented and procedures should be determined as to whether such a reservation might be made and who the beneficiaries thereof may be.

Another area of state law requiring clarification pertains to whether potential water releases may be made for minimum stream flow purposes. North Dakota Century Code § 61-02-14 appears to give the State Water Commission the authority to initiate and regulate minimum stream flows; however, the City of Fargo is unsure that statutes and administrative regulations provide a sufficient framework for potential releases for stream flow purposes. Specifically §61-02-14 suggests the State Water Commission has limited power to designate in stream flows. However, the State Water Commission's authority to obtain a priority right for such a flow may be limited by North Dakota Century Code § 61-04-02 that requires the "construction of works" for an appropriation, and North Dakota Century Code § 61-02-30 that requires diversion or control of water for an appropriation, which requirements are similar to the requirements in many other prior appropriations states where genuine acts of construction and control sufficient to support a finding of an appropriation are required. The requirement for the construction of works is also supported by North Dakota Administrative Code §89-03-01-07 that states a conditional water permit application can only be considered if "works" are associated with the proposed appropriation and North Dakota Century Code § 61-02-33 that similarly contemplates the "construction of works."

Fargo also believes that it must be made clear that any discussion of providing water for instream flows is contingent upon the development and completion of a project to meet the water supply needs determined by the Report. As the Report demonstrates, the water suppliers in the Red River Valley will not have sufficient water to meet future demands if a project is not developed. Accordingly, the only way other additional flows may be made available for in stream flow purposes is if a project is developed.

The City of Fargo also notes that in §3.2.2 of the draft Report dealing with potential additional ground water development, a statement is made that a rather large volume of water would be made available from excess surface waters to recharge aquifers. The City of Fargo has determined that there are no current regulations dealing with the operation of aquifer recharge projects. At a minimum, the laws of the State of North Dakota need to be supplemented in this area to provide regulations concerning the quality and quantity of water that may be injected into an aquifer, the maximum distances from the injection point where water may be withdrawn, as

Responses to the City of Fargo

well as the quantity that may be withdrawn. Additionally, any regulations necessary for the protection of other users of the aquifer must be implemented.

The Report should also reflect consideration of a new provision of North Dakota law. Subsequent to issuance of the Report the North Dakota legislature enacted North Dakota Century Code §61-01-01.2 (effective August 1, 2005). This legislation is titled as legislative "findings and declaration of policy" and states that North Dakota, acting through the State Water Commission, strongly discourages conversion of agricultural water permits to any other use. Through this statute the North Dakota legislature further declares that to preserve continued use of groundwater for agricultural irrigation and processing any feasible or reasonable alternative water projects should be developed rather than converting agricultural rights to municipal or domestic purposes. This new statute evinces a State prejudice against any alternative that may appear in the Report which involves groundwater currently used for any agricultural purpose. However, it is unclear, and therefore problematic, how the statue may interact with alternatives that consider using groundwater aquifers. The new statute could block alternatives that use a groundwater aquifer if any of the particular aquifer's water is used for agricultural purposes. This potential legal obstacle should be mentioned in the Report. Further, the Report should state the preference expressed by the State for feasible or reasonable alternative supplies of water as desired options.

The City of Fargo believes the interaction between water law of North Dakota and water law of Minnesota is an important element that should be addressed further in the Report. Specifically, comments prepared by legal counsel to Garrison Diversion Conservancy District note the number of legal obstacles dealing with the use of Minnesota water rights. The City of Fargo reiterates and adopts those same concerns.

NDSWC Administrative Code presently limits public water systems to projecting water demands 30 years into the future for the purpose of applying for water appropriation permits. In recognition of the year 2050 planning horizon identified for the RRVWS Project, a bill to extend the period for projecting water demands for public water systems to 50 years was proposed but failed during the most recent legislative session. Furthermore, industrial entities are presently unable to project future water demands and apply for respective appropriations from a water source where potential competition could occur. Limitations regarding the ability to approve appropriations that reflect extended water demand projections for public water systems and industrial entities could impact the feasibility of securing adequate water supply appropriations from surface and groundwater sources in North Dakota through the year 2050 planning horizon established for the RRVWS Project. It is suggested that the 30-year water demand projection timeline be identified as a possible long-term water supply procurement issue in the final Report.

Water Quality

Comment 20

Due to the relatively poor source water quality available to surface water systems in the Red River Valley, it is important that the final Report address proposed drinking water regulations and the respective potential impact on treatment facilities of stakeholders. Despite the use of ozone for primary disinfection, the City of Fargo is relatively concerned with the potential requirements of the Long-Term 2 Enhanced Surface Water Treatment Rule. Depending on

Responses to the City of Fargo

Response to Comment 20

The quality of water sources in the Red River Valley is not described as “poor” in the Draft or Final Needs and Options Reports. Surface water quality is summarized on pages 2-74 through 2-83. Groundwater water quality is addressed in tables 3.2.1 and 3.2.2. “Regulatory Overview of the Safe Drinking Water Act Report,” which is a supporting document to the Final Needs and Options Report. It addresses future regulatory changes. Water quality impacts to water treatment plants will be addressed in the FEIS.

source water sampling results, the City of Fargo could be required to implement modifications to its existing treatment system or potentially install an additional treatment technology. As a result, such regulations should be identified as potential water quality challenges to surface water systems of the Red River Valley.

Comment 21

Downstream systems on the Red River have expressed water quality concerns during low flow conditions. The North Dakota Department of Health (NDDH) has also expressed concern regarding the water quality of the Red River during low flow conditions, which would likely become wastewater effluent dominated. It would also be prudent to note the recent discussions on the regulatory front regarding the monitoring/control of the levels of pharmaceuticals, hormones, personal care product residuals, etc. that exist in wastewater effluent streams and the potential ramifications of this type of regulation on the RRVWS Project. It is possible that the NDDH could prohibit the City of Fargo from discharging its wastewater to the Red River during low flow conditions, which would ultimately contradict assumptions used during the hydrology modeling efforts to date. The water quality impacts during low flow conditions, if any, could likely be addressed during the finalization of the EIS.

Water Conservation

Comment 22

Per comments provided by the City of Fargo, Reclamation revised the level of attainable water conservation from 15.60 gallons per capita per day (gpcd) to 9.19 gpcd in the draft and final Water Conservation Potential Assessment documents. The estimated annual costs of implementing water conservation also declined from approximately $821,000 to approximately $326,000. Although the City of Fargo was pleased with the reduced level of attainable water savings through conservation efforts in the Final Water Conservation Potential Assessment, it is anticipated that a considerable amount of effort will be required to achieve the identified level of water conservation. Furthermore, it should be noted that the City of Fargo is presently committed to conserving water and has made significant progress over the last several years via the implementation of significant capital improvement expenditures. Prominently among those capital improvement projects are water line replacement activities that have greatly reduced the amount of system losses from the Fargo water distribution system. The current level of commitment by the City of Fargo and other water systems regarding water conservation should be recognized.

Editorial Observations

Comment 23

Page 2-57: The last sentence in the second paragraph references annual maximum municipal water demand. This sentence should instead reference the annual maximum rural water demand.

Page 2-72: The reference to Table 2.6.29 in the second paragraph should instead reference Table 2.9.3.

Page 3-43: The comparison of future water demands to permitted appropriations is intended to identify whether a system has adequate water supply appropriations to meet future demands. As noted on page 3-53, the analysis must also account for the

Responses to the City of Fargo

Response to Comment 21

In meetings with Reclamation, North Dakota Department of Health staff have stated that the Fargo wastewater treatment plant could release treated wastewater into the Red River under low flow conditions, so no water quality or release problems were assumed in flow analysis.

Water quality will be addressed in greater detail in the DEIS and FEIS. Reclamation is working closely with U.S. Geological Survey, North Dakota Department of Health, Minnesota Pollution Control Agency, U.S. Environmental Protection Agency, and Minnesota Health Department to address the potential impacts of the alternatives on surface water quality in the Red River Valley.

Response to Comment 22

Fargo's commitment to water conservation is recognized. The Final Needs and Options Report states, "Fargo has made significant improvements in their unaccounted-for-water loss demands, which resulted in a value of 10% for their future unaccounted-for-water loss demand (page 2-30). Water losses from other systems are also disclosed in section 2.4.

Response to Comment 23

Your editorial suggestions were incorporated where appropriate.

reliability of surface water supplies during a drought. It is important that this issue remain clear throughout the discussion in this section of the Report.

Page 3-74: A literature citation should be provided regarding the stated purpose of Lake Ashtabula.

Page 3-92: The Report states that priority is defined in North Dakota Water Law as the date that the water permit either was issued or was perfected. This does not appear to be a correct statement upon review of North Dakota Century Code and Administrative Code documentation, which state that a priority date is determined by the date on which a properly completed application is filed with the State Engineer (except for water applied to domestic, livestock, fish, wildlife, and recreational uses where a permit is not required).

Page 3-93: The Report does not mention the possibility for illegal or unauthorized diversions as potential demands on surface waters during a drought. This issue should be addressed in the Report.